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METROLOGY FOR ELECTROMAGNETIC TECHNOLOGY: A BIBLIOGRAPHY OF NIST PUBLICATIONS

Edited by
Annie J. Smith

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Edited by
Annie J. Smith

Electromagnetic Technology Division
Electronics and Electrical Engineering Laboratory
National Institute of Standards and Technology
Boulder, Colorado 80303-3328

September 1993

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U.S. DEPARTMENT OF COMMERCE, Ronald H. Brown, Secretary
TECHNOLOGY ADMINISTRATION, Mary L. Good, Under Secretary for Technology
NATIONAL INSTITUTE OF STANDARDS AND TECHNOLOGY, Arati Prabhakar, Director

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METROLOGY FOR ELECTROMAGNETIC TECHNOLOGY: A BIBLIOGRAPHY OF NIST PUBLICATIONS

Annie J. Smith, Editor

This bibliography lists the publications of the personnel of the Electromagnetic Technology Division of NIST during the period from January 1970 through publication of this report. A few earlier references that are directly related to the present work of the Division are also included.

Key words: cryoelectronics; electromagnetic metrology; lasers; optical fibers; superconducting materials

INTRODUCTION

R. A. Kamper

The Electromagnetic Technology Division was formed during the reorganization of the National Bureau of Standards (now the National Institute of Standards and Technology) in April 1978 by combining parts of the former Electromagnetics and Cryogenics Divisions. It develops measurement methods and standards and provides metrological support for laser systems, optical communication equipment, cryoelectronics, magnetics, superconductors, and other unusual electrical engineering materials. For the individual staff members of the division, the reorganization brought a realignment of long-term goals but little immediate discontinuity in their work. It therefore makes good sense that this bibliography should cover a period beginning some time before the reorganization, so as to include at least the more recent origins of the present work of the division. The editor has attempted to include all work published by staff members of the division, while they were employees of NIST, in the period from January 1970 through publication of this report. There are a few exceptions, where work that is totally unrelated to the present program has been excluded or where work by authors now in other parts of NIST has been included because of its special significance. A few papers on various topics published before 1970 have also been included because of their direct relationship to the present program.

Several other sources may be useful to the reader who is interested in activities at NIST connected with electromagnetic metrology. A companion bibliography to this one lists the publications of the Electromagnetic Fields Division: NISTIR 5009. Its topics include metrology for antennas, satellite communications equipment, microwave metrology, electromagnetic waveform metrology, electromagnetic interference, and hazard. An excellent summary of the whole field of electromagnetic metrology as it stood in 1967 was published as a special issue of the Proceedings of IEEE (vol. 55, June 1967). Advances in the following decade were described in two other special issues of the same journal (vol. 66, April 1978, and vol. 74, January 1986).

A Note on Abbreviations

NOTE: On August 23, 1988, the National Bureau of Standards (NBS) became the National Institute of Standards and Technology (NIST); therefore, documents with either prefix are considered NIST publications.

Most readers are familiar with the commonly used abbreviations for the names of the professional journals that appear in this bibliography. Some publication series are peculiar to NIST and may call for explanation. They are:

NISTIR - NIST Interagency/Internal Report
NIST TN - NIST Technical Note
NIST SP - NIST Special Publication
NIST HB - NIST Handbook
NIST JRES - NIST Journal of Research
NIST MN - NIST Monograph

NBSIR - NBS Interagency/Internal Report
NBS TN - NBS Technical Note
NBS SP - NBS Special Publication
NBS HB - NBS Handbook
NBS JRES - NBS Journal of Research
NBS MN - NBS Monograph

Purchase Procedures and Document Availability

NIST (NBS) Technical Notes, Special Publications, Handbooks, Journals of Research, and Monographs may be purchased from the U.S. Government Printing Office at the following address: New Orders, Superintendent of Documents, P.O. Box 371954, Pittsburgh, PA 15250-7954. Orders may be payed by major credit card, NTIS Deposit Account, or check or money order payable in U.S. dollars to the Superintendent of Documents. The Government Printing Office usually only stocks these publications for a year or two, after which they may be purchased from the National Technical Information Service at the address listed below.

NIST (NBS) Interagency/Internal Reports (NISTIRs, NBSIRs) may be purchased from the National Technical Information Service, Springfield, VA 22161, (703) 487-4650. Orders may be payed by major credit card, NTIS Deposit Account, or check or money order payable in U.S. dollars to NTIS.

Reprints of papers published in non-NIST media may be available in limited quantities from the authors.

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